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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/971,081
Filing Date: October 05, 2001
Appellant(s): SON, OK-HYUN

MAILED

AUG 08 2007

Technology Center 2600

Robert E. Bushnell
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 4/13/07 appealing from the Office action
mailed 4/4/06.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6181497 Malone 1-2001

Applicant's Admitted Prior Art, figures 1 and 2

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 112

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The specification fails to describe "a controller regulating movement of said head based on at least one of said first data address mark and said second data address mark."

The following is a quotation of the first paragraph of 35 U.S.C. 112:
The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 32-34 and 50-52 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains the limitation "a controller regulating movement of said head based on at least one of said first data address mark and said second data address mark" which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There is no disclosure of regulating movement of the head based on one of

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the data address marks as claimed. Col. 4, lines 5-11 show the disk format is servo sectors and data sectors, and the actual digital data is written into the data fields which are in the data sectors, not the servo sectors. Col. 4, lines 26-30 and 34-37 show the data address mark is part of the data field, the data address mark informs that the data is started and provides necessary synchronization when reading the data, and the data is the actual digital information stored in the disk, and thus is not the servo information stored on the disk in the servo sector. Col. 4, lines 12-21 do discuss information such as cylinder number which could conceivably be used while regulating movement of said head, but this is in the context of the ID field, which is distinct from the data field. Col. 5, lines 21-43 describe regulating movement of said head, but by using head position information which is servo information, and by using a track number. The disclosure does not state the source of the track number information. A review of all the prior art cited by both the examiner and by applicant during the prosecution of this application shows track number information is commonly obtained in the art from the servo information in servo sectors, not from the user data in data sectors. Even if it were obtained from the cylinder number mentioned above, that would still be from the ID field and not from the data field. There is no description of said claim limitation in applicant's disclosure as originally filed, thus said claim limitation is new matter and must be deleted from the claims.

Claims 32-34 and 50-52 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for reading first and second data address marks, does not reasonably provide enablement for "a controller regulating

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movement of said head based on at least one of said first data address mark and said second data address mark." The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims. Col. 5, lines 21-43 describe regulating movement of said head, but by using head position information which is servo information, and by using a track number. The disclosure does not state the source of the track number information. A review of all the prior art cited by both the examiner and by applicant during the prosecution of this application shows it is commonly obtained in the art from the servo information in servo sectors, not the user data in data sectors. Even if it were obtained from the cylinder number mentioned above, that would still be from the ID field and not from the data field. Making the claimed invention would require undue experimentation, as the disclosure completely lacks any description of how one can regulate the position of the head based on data address marks, while the cited prior art fails to show even the slightest description of how this feat can be performed and the examiner in his experience can not recall any showing in the prior art of such a means for regulating head movement. The examiner does not consider this claim limitation to necessarily be beyond the level of ordinary skill in the art, but at this time it is not possible to make any such determination without knowing how the claimed movement regulation is performed, and applicant's disclosure fails to provide any details requisite for making such a determination; applicant's disclosure provides no guidance as to how to make this aspect of the claimed invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 6, 16-17, 20-21, 24, 26-28, 31, 35-49 and 54 are rejected under 35 U.S.C. 102(e) as being anticipated by Malone, Sr. ((6181497) as Malone).

Malone, Sr. Figures 2A, 5A-8, and 10 meet all the limitations of claims 1, 16, 20, 24, 26-27, 31, 37, 40, 44, 46-47, 49, and 54. Figure 5A shows recording said data address mark to establish synchronization requested for reading user data in at least two different recording locations (14 and 62, where sync bytes correspond to the claimed data address marks as they indicate the location of the data along the track), and Figure 8 shows when one data address mark (14) is detected (92) to establish synchronization requested for reading user data (96), regarding said one mark as an effective mark of a corresponding data region, and skipping a remaining mark (62) when any one mark is normally detected (98), which comprises distinguishing between the two address marks. Figure 2A shows data blocks (34) preceding said servo information areas (30).

Regarding claims 2, 17, 21, 28, 35-36, 38-39, 45, and 48, Figure 5A shows sync bytes 14 and 62 are recorded in two separate locations, and col. 7, lines 47-49 show the second data address mark (secondary sync byte) recorded with a pattern different from the first pattern.

Regarding claim 3, col. 5, lines 56-57 show each said address mark (sync byte) being constructed of one (or more) byte of information.

Regarding claim 6 and 41-43, col. 13, lines 49-57 show the data address mark (sync byte) being detected by a disk drive controller performing a masking function with respect to the data address mark (sync byte).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims (7-15) are rejected under 35 U.S.C. 103(a) as being unpatentable over 35 U.S.C. 103(a) as being unpatentable over the combination of the Admitted Prior Art and Malone, Sr.

Regarding claims 7 and 11-12, the Admitted Prior Art shows a headerless servo recording system with headerless servo sectors and data sectors with an ID field and a data field with a single data address mark.

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Malone, Sr. Figure 5A shows recording a data address mark to establish synchronization requested for reading user data in at least two different recording locations (14 and 62, where sync bytes correspond to the claimed data address marks as they indicate the location of the data along the track), Figures 8 and 10 show detecting said data address mark to confirm validity of user data following said data address mark (92, 94), and Figure 8 shows when one data address mark (14) is detected (92) to establish synchronization requested for reading user data (96), regarding said one mark as an effective mark of a corresponding data region for confirming the validity of the data, and skipping a remaining mark (62) when any one mark is normally detected (98), which comprises distinguishing between the two address marks. Malone, Sr. also shows a disk with tracks having servo sectors and data sectors, an error correction code region, a transducer head for reading and writing data and read servo, and means for positioning the head across the tracks (Figures 2A and 6).

Malone, Sr. shows an embodiment using servo blocks with header information, col. 2, lines 24-30 show it was known to Malone, Sr. to use an identification field in each data sector, col. 6, lines 23-25, col. 7, lines 7-10 show the invention of Malone, Sr. can be used with other servo schemes and disk formats, and claim 1 in light of the further limitation of claim 5 shows that the invention of Malone, Sr. is not limited to only headerless data blocks. Malone, Sr. does all this for the purpose of providing sync byte redundancy to improve overall disk drive reliability.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the disclosures of Malone, Sr. with the Admitted Prior Art to yield a headerless servo recording system comprising data sectors that include identification fields and that uses redundant sync bytes for data detection, the motivation being to provide sync byte redundancy to improve overall disk drive reliability in a headerless servo recording system.

Regarding claims 8 and 13, Malone, Sr. Figure 5A shows sync bytes 14 and 62 are recorded in two separate locations, and col. 7, lines 47-49 show the second data address mark (secondary sync byte) recorded with a pattern different from the first pattern.

Regarding claims 9 and 14, Malone, Sr. col. 5, lines 56-57 show each said address mark (sync byte) being constructed of one (or more) byte of information.

Regarding claims 10 and 15, Admitted Prior Art Figure 2 shows the claimed identification field.

Claims 16-54 are rejected under 35 U.S.C. 251 as being an improper recapture of broadened claimed subject matter surrendered in the application for the patent upon which the present reissue is based. See Pannu v. Storz Instruments Inc., 258 F.3d 1366, 59 USPQ2d 1597 (Fed. Cir. 2001); Hester Industries, Inc. v. Stein, Inc., 142 F.3d 1472, 46 USPQ2d 1641 (Fed. Cir. 1998); In re Clement, 131 F.3d 1464, 45 USPQ2d 1161 (Fed. Cir. 1997); Ball Corp. v. United States, 729 F.2d 1429, 1436, 221 USPQ 289, 295 (Fed. Cir. 1984). A broadening aspect is present in the reissue which was not present in the application for patent. The record of the application for the patent shows

that the broadening aspect (in the reissue) relates to subject matter that applicant previously surrendered during the prosecution of the application. Accordingly, the narrow scope of the claims in the patent was not an error within the meaning of 35 U.S.C. 251, and the broader scope surrendered in the application for the patent cannot be recaptured by the filing of the present reissue application.

In claims 16, 20, 24, 26, 31, 32, and 35-54, applicant has omitted the language "skipping a remaining data address in said different recording locations of said data track, when any one data address mark recorded in said different recording locations is normally detected" and "said transducer head not utilizing a remaining data address mark recorded in said different recording locations of said data track, when a data address mark recorded in a different data address regions is detected." This language was specifically added to claims in the original patent to place it in condition for allowance..

(10) Response to Argument

Regarding argument on page 24 of the Brief: Appellant argues that the specification complies with the written description for "a controller regulating movement of said head based on at least one of said first data address mark and said second data address mark." in col. 4, line 57 to col. 5, line 3 of Son (5963387).

It has determined by Appellant that the controller regulating movement of the head based on at least one of the first data address mark and the second data address mark that which is implemented not in the seek mode but rather in the track following

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mode. In the track following mode, the head is on above the centerline of the circular track or the head is transfixed above the circular track (or the head is at stationary position on above the track while the disk moving underneath the head) during the transducing (reading of the data address mark(s). Therefore, there is no controlling or regulating the movement of the head for processing the data address mark. Furthermore, Son describes in col. 4, lines 12-44 that the data address mark do not contain any form of servo control (i.e. track number, positioning, track centerline and etc.) information for control or regulating the movement of the head during the transducing of the data address mark; thus, the movement of the head is not based on the data address mark. Additionally, Son discloses that the difference between the "data address marks" and the "ID (servo) address marks", and, the respective functions in col. 4, lines 12-44 of Son. Moreover, the specification fails to

Son (5963387), col. 4, lines 12-44.

ID field consists of an ID preamble, an ID address mark, an ID, a cyclic redundancy code (CRC) and an ID postamble, as shown in FIG. 2. The ID preamble provides clock synchronization for the ID field during reading and simultaneously provides a gap before the ID field. The ID address mark informs that the ID is started and provides synchronization for reading the ID. The ID is the header information for identifying the sector in which a head is currently positioned, such as a sector number, a head number, a cylinder number, etc. The CRC is an error detecting code for detecting an error of the ID address mark and the ID. Generally, the CRC is generated by using a CRC-CCITT generating polynomial. The ID postamble provides a necessary timing margin after reading the ID.

Data field consists of a data preamble, a data address mark, data, a CRC and a data postamble, as shown in FIG. 3. Meanwhile, the data field of the magnetic disk using a headerless servo recording system is formed as shown in FIG. 4. The data preamble positioned between the ID postamble and a data synchronizing bit provides clock synchronization for the data field during reading and simultaneously provides a gap between the ID field and the data field. The data address mark informs that the data is started and provides

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necessary synchronization when the magnetic disk driving apparatus reads the data. The data is the actual digital information stored in the magnetic disk. An error correcting code (ECC) is an error detecting code for detecting and correcting an error of the data. The data postamble provides a necessary timing margin after reading the data. Generally, since the ID postamble is adjacent to the data preamble, and the data postamble is adjacent to the ID preamble, they are mixedly used.

provide the support for the controller regulating movement of the head that which based on the data address marks" especially when Son discloses that the "ID data address marks" as the control element for controlling the head movements

Son (5963387), col. 5, lines 26-29.

Read/write channel circuit 10 is connected between the preamplifier 8 and the DDC 28 for decoding data pulses from an input signal received from the preamplifier 8 to generate read-out data RDATA, and for decoding writing data WDATA received from the DDC 28 to transmit the decoded WDATA to the preamplifier 8. The read/write channel circuit 10 generates a phase error signal (PES) by decoding head position information, i.e., a part of servo information, which is recorded on the disk. The PES is then transmitted to the micro-controller 14 via the A/D converter 12. At this stage, the A/D converter 12 converts the PES into a digital value corresponding to a predetermined level and transmits the converted PES to the micro-controller 14.

From page 31 of the Brief.

The two primary objects of a head positioning system are (1) to maintain the head at or very near the track centerline while writing or reading and (2) to move the head rapidly from one track to another so as to minimize the time taken to locate the head at or near the centerline of the target track. The latter function is known as "seeking".

and there is no movement (or maintain (transfixed) the head above the track centerline while the disk is spinning or the head is in the track following mode) for the head during the reading of the data address marks.

Hence, Appellant is contradicting on the "address marks" for regulating the movement for the head during the reading of the "data address marks" as recited in the claims.

Regarding argument on page 51 of the Brief: Appellant 's argument for Malone '487 is perplexed; especially the Appellant 's case has not presented to the Board of Patent Appeals and Interferences. As to Appellant's argument, Malone depicts the data format structure in figures 4-5B of Malone (col. 7, lines 11-50 of Malone) as recited in the Appellant's claims. As to the phrase "data address mark", Appellant is his own lexicographer.

Argument in page 51 of the Brief.

" To paraphrase the Board of Patent Appeals and Interferences, how can Malone '497 be read to teach Appellant's "recording of said data address mark in at least two different recording locations of said data track" when Malone '497 does not even use the phrase "data address mark"?

Regarding argument on page 58 of the Brief: as arguendo, Appellant argues that Malone's "sync byte" can not be equate to "data address mark" as recited in the claims. Malone describes the "sync byte" is in line with Son on col. 4, lines 35-37.

Furthermore, there is no functional difference between Son's "data address mark" and Malone's "sync byte" but merely in the terminology which Appellant is his own lexicographer.

Son (5963387), col. 4, lines 35-37.

The data address mark informs that the data is started and provides necessary synchronization when the magnetic disk driving apparatus reads the data. The data is the actual digital information stored in the magnetic disk.

Malone, Sr. (6181497), col. 2, line 63 to col. 3, line 4.

... followed by a pattern or group of adjacent patterns, generally referred to as "sync bytes", that mark the beginning of the data field and provide a frame of reference for correctly distinguishing data bytes. Sync bytes are detected by sync byte detection logic in the data channel that looks for one or more predetermined sync byte patterns during a certain window of time. Once the sync byte is identified, the data bytes that follow can be properly decoded.

In short, the "data address mark" or the "sync byte" is a "mark" for identifying the user data (or data field) and provide synchronization to the read channel for read (decode) data (or data field) with the disk.

Regarding argument on page 66 of the Brief: Appellant argues that the combination of Malone and the Admitted Prior Art is improper because Malone because Malone fails to uses the phrase "data address marks" and use the data address mark to establish synchronization of the user data and at two different recording location. The argument for the "data address mark" is discussed in above. The two different recording location is depicts in figures 4-5B of Malone (see associated description for details).

Regarding argument on page 73 of the Brief: Appellant argues that U. S. Patent & Trademark Office does not support the *per se* rule of 35 U.S.C. §251. Examiner disagrees because the U.S. Patent & Trademarks Office has not abolished this rule from the MPEP. Thus, the U.S. Patent & Trademarks Office supports this rule.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

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For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Kin Wong (PE)



K. WONG
PRIMARY EXAMINER

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